



Western Community Energy

2020 INTEGRATED RESOURCE PLAN

September 1, 2020

Approved by WCE Board of Directors on August 12, 2020

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I. Executive Summary

a. INTRODUCTION

Western Community Energy (WCE) is a California joint powers authority located within the geographic boundaries of Riverside County, formed in 2018 for the purpose of offering rate savings to electricity customers and developing and implementing sustainable energy initiatives that reduce energy demand, increase energy efficiency and advance the use of clean, efficient and renewable resources. WCE's member agencies include seven cities located in Riverside County – the Cities of Canyon Lake, Eastvale, Hemet, Jurupa Valley, Norco, Perris, and Wildomar, however the City of Canyon Lake is not currently receiving electric service from WCE. WCE members desire to further WCE goals by implementing and administering a community choice aggregation (“CCA”) program (“Program”) available to members that elect to become Program participants (“CCA Members”).

WCE was established with founding principles, as described in our Joint Powers Agreement, which guide the development of this Integrated Resource Plan (IRP) and related procurement activities:

- Provide local control in rate setting.
- Provide overall rates that are lower and/or competitive with those offered by Southern California Edison (SCE) for similar power supplies.
- Provide power supply and program options to residents and businesses.
- Provide expanded options for economic development.
- Supply an energy portfolio that will use local and/or regional renewable resources (in the future), including existing facilities, to the maximum extent technically and economically feasible.

These principles will be revisited as WCE operations progress. WCE began serving load to residential and non-residential customers in the cities of Norco, Perris, and Wildomar on April 1, 2020. Service to Eastvale, Hemet, and Jurupa Valley subsequently began on May 1, 2020. Service to Canyon Lake is being considered for 2022; however, this City has not yet committed to a start date at the time of this filing. Additional jurisdictions within Riverside County and the surrounding area(s) may join WCE at any time once they adopt an action to do so and are approved by the WCE Board. This leaves room for WCE to expand its territory, no earlier than 2022. On a regular basis, an updated Integrated Resource Plan (“Plan”) will be submitted to the California Public Utilities Commission (CPUC), or if any new members join the Program; however, load will not be served until the following year, in accordance with the Resource Adequacy Proceeding and CCA registration and expansion process set forth in Resolution E-4907. Prior to submitting an updated Plan, WCE will work with SCE on the timeline to begin new service and provide notification to the CPUC staff that an update will be submitted.

Since WCE only began providing service to customers in April and May of 2020, WCE expects that it will be able to provide increasingly detailed and precise planned resource portfolios in future years, as it pursues resource procurement, particularly longer-term resource agreements consistent with SB 350.

b. PRODUCT OFFERINGS

Choice Plan

Under its Choice Plan conforming portfolio, WCE provides electric service that is both more affordable and cleaner than SCE's default service. Consistent with the policy direction of its Board of Directors, WCE will not contract for nuclear power as part of its procurement mix. WCE currently procures 37% of its energy from resources that qualify as renewable under California's Renewable Portfolio Standard (RPS) requirements. WCE plans to escalate each of these percentages over time so as to continue providing cleaner energy for its customers than SCE's bundled service. The Board may change its carbon-free and renewable energy targets over time in response to changing technology, cost and expectations for green energy procurement. The targets presented are largely consistent with WCE's Implementation Plan, with the RPS eligible target percentage extrapolated to 60% by 2030. At the time of submission of this plan to the CPUC, WCE's Choice Plan generation rates are approximately 4% lower resulting in an average rate 2% lower overall bill than SCE bundled rate.

Choice Plus Plan

WCE's Choice Plus Plan preferred portfolio option offers customers 100% green energy. As WCE has only recently launched, customers' enrollment is de minimis. WCE will provide more specific information about how adoption of Choice Plus Plan energy impacts procurement in future planning studies when more is known about the popularity of this product. Currently, WCE's Choice Plus Plan bundled, average rate is approximately the same as SCE's equivalent bundled for 100% renewable energy rate. The Choice Plus rate is equal to the Choice plan rate plus \$0.01/kWh, which represents the weighted incremental cost of PCC1 and PCC2 price adders.

Additional Customer Net Energy Metering Offering - Choice Solar Plan

In addition, WCE offers its customers Net Energy Metering (NEM) service, named Choice Solar, with grid exports compensated at a rate that exceeds the rate offered by SCE. This allows customers to pair cleaner grid electricity with renewable energy generated on their premises and potentially support solar-related jobs in the region.

The Choice Solar Plan provides customers with \$0.06900 per kWh generated and exported, into the distribution grid, both monthly and during the annual true up as compared to SCE's annual true up NEM offering of \$0.02424 per kWh (Net Surplus Compensation rate for July 2020).¹ WCE's Board will explore additional ways to incentivize rooftop solar and other renewable electric generation systems in the future.

Finally, customers will continue to have access to important electric rate discounts under programs such as Medical Baseline and CARE/FERA, as well as potential new programs specific to WCE customers.

¹ <https://www.sce.com/regulatory/tariff-books/rates-pricing-choices/net-surplus-compensation>

c. PROCUREMENT STATUS

WCE issued a request for offers in the first half of 2020 to solicit offers for power supply. WCE has also been informally gathering information from providers regarding planned facilities and resource contracts. WCE began offering its Choice Plan starting at 37% RPS resources in 2020 in order to meet and exceed its 2020 RPS compliance obligations (33.8%) and plans to continue to meet or exceed its RPS compliance obligations during the coming ten-year timeframe. The exact portfolio characteristics selected may vary depending on legislative and policy changes, technological improvements, potential for air quality improvements in disadvantaged communities, wildfire safety considerations, and preferences of the community, as well as other key local developments, such as the potential launch of the City of Canyon Lake in 2022. The WCE Board of Directors has decided that nuclear energy is not a preferred source of electricity at this time.

WCE has executed agreements with SCE for resource adequacy (RA). As part of this agreement, SCE will allocate all required system, flexible, and local RA resources to satisfy WCE 2020 RA obligation as well as the transfer of local RA resources to satisfy WCE's 2021 and 2022 local RA compliance requirements. What follows describes that arrangement's origination and schedule. WCE submitted its Implementation Plan and Statement of Intent to the Commission on December 20, 2018, with an anticipated launch date of April 2020. WCE had provided the anticipated launch date to the Commission and SCE through informal discussion as early as March 2018. On March 7, 2019, SCE notified WCE through the meet and confer process established by Resolution E-4907 that SCE's Customer Service Re-Platform ("CSRP") project would freeze all CCAs from launching in the first half of 2020 (and late 2019), and that WCE could launch in July 2020 or thereafter, with a suggested preference that newly certified CCAs launch in the fall of 2020. Both SCE and WCE brought the implementation issues to the attention of CPUC Energy Division staff. Although WCE was aware of the CSRP conflict, WCE filed its load forecast on April 19, 2019 with its original, anticipated April 2020 launch date, as it did not yet have a negotiated launch date with SCE considering that the load forecast was due only three weeks after WCE was notified of CSRP implementation conflicts.

On June 21, 2019, WCE submitted its 2019 RPS Procurement Plan with the CPUC, noting the CSRP implementation issue and that a change in WCE's launch date was the subject of discussions between WCE, SCE and CPUC staff. WCE expressly noted in the 2019 RPS Plan that WCE's launch date was anticipated to change to July 2020 and that a revised RPS Procurement Plan could be submitted to the Commission upon finalization of the launch date. Due to confidential discussions and pending negotiations between WCE and SCE, WCE could not disclose specific details of a possible resolution or affirmatively commit to a fixed launch date. In August 2019, WCE and SCE reached an agreement on WCE's launch date and notified CPUC staff of the parties' plan to file an advice letter resolving the dispute and agreeing to work cooperatively on moving WCE's launch date and working with SCE's CSRP implementation.

On August 22, 2019, SCE filed Advice Letter 4058-E stating that WCE would move its launch date to July 2020 and that SCE would allocate RA on WCE's behalf for 2020 and transfer RA to WCE for its 2021 and 2022 compliance obligations. On August 16, 2019, WCE filed its amended load forecast noting the revised July 2020 launch date and that SCE was allocating

RA on its behalf for the three-year RA compliance obligation. SCE included WCE's load in its forecast for 2020, 2021, and 2022 compliance. Subsequently, in late August 2019, WCE and SCE agreed that it was technically and economically prudent to have WCE launch around its original April 2020 timeframe due to CSR implementation schedule changes.

WCE has obtained contracts to satisfy its long-term obligation for renewable energy contracts for calendar year 2020 (0.25%). Additionally, there is ample time for WCE to enter into long-term renewable contracts consistent with Compliance Period 4 (2021-24) obligations, which is the first period for which significant long-term contract obligation exists. WCE is considering a number of different paths for procurement of long-term renewable generation, including potentially partnering with other already-operating CCAs or electric service providers (ESPs) in the procurement of long-term renewable generation, and issuing its own solicitation following the WCE program launch in 2020.

Table I summarizes the status of WCE's short-term procurement activities. Many of the activities are in progress or scheduled for the third quarter of 2020. Specifically, WCE issued an RFO for up to 435,000 MWh of PCC1 and up to 61,000 MWh of PCC2 RECs in mid-July with contracting completed in August 2020. Deliveries would be for the period August 2020 through December 2020.

WCE also plans to issue an RFO to secure its 2021 RA obligations later in 2020. The CPUC's recent decision regarding the Central Procurement Entity (CPE), and naming PG&E and SCE as the CPEs, is expected to impact the planned RA solicitation. WCE will continue to monitor RA markets as the CPE rules are developed and finalized and adjust procurement strategies accordingly. At the time of this filing, WCE plans to procure its 2021 and 2022 Local RA obligation through SCE.

Along with 10 other CCAs, WCE issued a joint request for information (RFI) on long-duration storage on June 3, 2020. The goal of the RFI was two-fold. First, to collect information to inform upcoming efforts to issue request for offers for long-duration storage resources. Second, to assess the viability of long-duration storage and inform the CCAs' individual and collective efforts in developing their IRPs specifically as it relates to meeting long-duration storage capacity needs identified in the CPUC's Reference System Portfolio (RSP). The RSP (38 MMT scenario), identified a need to add 1605 MW of new long-duration storage (minimum of eight-hour discharge duration) by 2026. Taking a pro rata share of the CCA's portion of the capacity represents 1,605 MW in 2026. For WCE alone, the needed capacity is 12 MW assuming an eight-hour duration.

The RFI is an attempt to reflect the results from the RSP in that it sought information for resources to be grid charged, have a minimum discharge duration of 8 hours and commercial operation by 2026. The RFI was open to multiple technologies including but not limited to battery storage, mechanical storage, thermal storage, and chemical storage. RFI responses were due July 1, 2020 and over 30 submissions were received for 16 distinct projects. While WCE and the group of CCAs are still reviewing results, the general observation is that the amount of capacity identified in the RSP can be technically developed by 2026. The following is a summary of key information gathered:

- A total of 5,500 MW of project capacity was submitted;

- Offers varied in battery discharge duration (8, 12, or 16-hour) and available attributes (e.g., RA only, tolling, A/S);
- 14 types of technologies were submitted including lithium-ion, chemical flow, compressed air, pumped storage hydro, thermal storage, and 2nd life EV batteries;
- Prices ranged from \$10 to low\$50’s per kW-month; and
- Projects are able to meet an on-line date of 2026 or earlier.

Additionally, no developer expressed specific concerns with respect to contracting with a single CCA or with multiple CCAs through a joint buying arrangement. Joint procurement for long-duration storage could allow for better economies of scale, while reducing project development, technology and regulatory risk.

WCE along with a sub-set of the CCAs that participated in the RFI, intend to issue a joint RFO later this year. While the results from the RFI appear promising from a technical potential basis, WCE and the other CCAs remain concerned about the costs, benefits and regulatory risk and will look to the results of its future RFO and discussions with developers and the CPUC to inform future procurement decisions for long-duration storage.

Table 1 summarizes WCE’s procurement schedule planned at the time of this filing.

Table 1. Procurement Schedule

Product Year	Product	
	Resource Adequacy	Energy/RPS/Carbon-Free
2020	<ul style="list-style-type: none"> • Contract with SCE for 2020-2022 obligations 	<ul style="list-style-type: none"> • Baseload conventional Energy via two RFOs • 34,000 MWh CAT 3 RECs. 10.5 Year Contract • RFO for Short-term PCC1 and PCC2 RECs delivered in 2020
2021	<ul style="list-style-type: none"> • RA RFO to be issued Q3 2020 	<ul style="list-style-type: none"> • Demand Response (DR) Program RFI Issued Q2 2020 • RFO for long-term PCC1 resources scheduled release in September 2020
2021 and later		<ul style="list-style-type: none"> • Joint RFI Long-Duration Storage Issued Q2 2020. RFO Expected September 2020 with final negotiations by May 2021. Online dates expected before January 1,2026

WCE will consider the deliverability characteristics of its resources (such as the resource’s dispatchability and available capacity) and will review the respective risks associated with

short and long-term purchases as part of its forecasting and procurement processes. These efforts will lead to a more diverse resource mix, address grid integration issues and provide value to the local community.

d. PROCESS OVERVIEW

WCE evaluated the reference system portfolios (RSPs) and its share of new resources based on its load share. The results of the two required conforming portfolios are provided in this report. WCE relied on modeling and calculators available from the CPUC and did not perform additional modeling or analysis. The resulting resource mix, new resources, and demand-side potential are well-aligned with WCE's power procurement strategy.

e. FINDINGS

Important conclusions from WCE's planning process include:

1. Long-term grid reliability and multi-year local RA obligations are placed on the Central Procurement Entities (CPEs). WCE will continue evaluating whether self-procurement of long-term RA resources is in its best interest in terms of least cost, best fit, and least risk.
2. Through joint solicitations, CCAs are able to cost-effectively coordinate future power supply acquisitions for both existing and pre-construction resources. Joint solicitations are effective for multiple resource types including resource adequacy, long-term renewables, energy storage, and others.

f. ACTION PLAN

WCE recognizes its share of the Reference System Plan will require procurement of local renewables, long-duration and short-duration storage, demand-side programs and distributed generation. In order to realize WCE's share of the RSP, the following Items are desired actions based on this IRP process:

Develop Local Renewable Resources

Planned mechanisms for procurement of local renewable energy include feed-in tariffs (FIT) for renewable energy systems with capacity less than 1 MW and with minimal on-site loads, and net metering arrangements like those offered by SCE for solar systems under 1 MW that principally serve on-site load. As part of this process, WCE is evaluating procurement guidelines for improving service and providing economic development opportunities for local disadvantaged communities.

Long Duration Energy Storage

WCE, as part of its board-approved procurement strategy, plans to pursue investment in long-duration storage resources which may include lithium battery storage, pumped hydroelectric, or other commercially available technology.

WRCOG Administrated Energy Efficiency Programs

WCE has an Administrative and Management Services Agreement with Western Riverside Council of Governments (WRCOG) to provide administrative and staffing services. Through this agreement, WCE is able to leverage WRCOG's programs. WRCOG currently receives funding through SCE and Southern California Gas Company to implement its Local Government Partnership. WRCOG also works with the Southern California Regional Energy Network to participate in their EE programs. WRCOG plans to continue its current efficiency work post WCE implementation and develop additional efficiency programs that enhance, but do not duplicate, existing programs in its overall integrated demand side management strategies.

WCE may complete the CPUC application process for either the "elect to administer" or the full administration of energy efficiency programs and use of funds collected through the existing Electric Program Investment Charge (EPIC) program surcharges paid by WCE customers. Additional details related to WCE's energy efficiency plan will be developed once WCE's Program phase-in is underway and financial viability is established.

Explore Demand Response (DR) Potential

WCE is exploring options for including DR programs into its overall integrated demand side management strategies. Other CCAs have initiated some prototype DR projects but have not found opportunities for large scale DR deployment to date. Two newly emerging areas of demand response are electric vehicle and heat pumps with thermal storage combined with smart grid or timer control. WCE will also explore the potential for fuel switching as a form of DR. WCE recently went through a Request for Proposal process to examine Implementation of a Smart Thermostat Program to start. Due to the Initial startup and ongoing costs, WCE has elected to postpone moving forward with development, as it seeks funds to cover these costs.

Distributed Generation

WCE plans to implement NEM and FIT rate schedules which will be more remunerative than the comparable SCE schedules to encourage residents, businesses and developers to install more solar generation within the WCE service area. WCE's resource plan calls for several MWs of both NEM and FIT capacity to be developed within the first several years of operation.

II. Study Design

Load Assignment

As directed in the IRP Process, WCE utilized the mid Baseline mid AAEE load forecast from Form I.1c of the California Energy Commission's (CEC) 2019 Integrated Energy Policy Report (IEPR) demand forecast through 2030. The forecast includes an assumed 5-10% opt out rate. Table 2 summarizes the forecast based on the Concentrating Solar Power (CSP) calculator Demand Inputs. Table 2 also shows the load ratio share used to allocate capacity (MW) for the California Independent System Operator (CAISO) system to WCE.

Table 2. Load Assumptions

		2020	2022	2026	2030
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Assigned Load Forecast for IRP (i.e., Managed Retail Sales Forecast)	<i>GWh</i>	1,285	1,574	1,586	1,607
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Default Demand Inputs (based on sales-weighted share of total from IEPR, grossed up for T&D Losses)	<i>Units</i>	2020	2022	2026	2030
Baseline net energy for load (no BTM PV, EV, electrification, energy efficiency)	<i>GWh</i>	1,486	1,861	1,937	2,010
Electric Vehicle Load	<i>GWh</i>	25	51	83	110
Other Electrification	<i>GWh</i>	1	3	8	12
Building Electrification	<i>GWh</i>	0	0	0	0
Energy Efficiency	<i>GWh</i>	(7)	(24)	(59)	(86)
Behind the Meter Photovoltaic (PV)	<i>GWh</i>	(118)	(192)	(257)	(311)
Total Managed Net Energy for Load	<i>GWh</i>	1,388	1,699	1,712	1,735
CAISO Managed Net Energy for Load	<i>GWh</i>	1,388	1,699	1,712	1,735
Load Ratio Share		0.62%	0.77%	0.77%	0.78%

Resource Adequacy

WCE's arrangement with SCE for provision of RA from 2020 thru 2022 is described earlier in this report. For 2020, SCE will be responsible for meeting and reporting on RA compliance to the CPUC and the CAISO for both SCE and WCE. This has been arranged through an agreement between SCE and WCE filed with SCE's Advice Letter 4058-E.

The focus of the limited modeling performed for this IRP was to craft portfolios to meet WCE's energy requirements and calculate portfolio greenhouse gas (GHG) emissions. WCE will also comply with all RA requirements, including any future requirements for multi-year RA obligations. WCE's share of RESOLVE resources in the RSP is insufficient to meet its system RA requirements. Therefore, WCE recognizes that it will need to procure RA contracts that meet the shortfall between its RA requirements and preferred resources given WCE's share (energy) of the RSP. WCE has not attempted to construct a portfolio of future RA as procured from any specific resource or resource type. As mentioned previously, WCE will release an RFO for RA in the third quarter of 2020 and will continue to evaluate resources for their capacity contributions as WCE seeks to expand its resource mix.

In addition, WCE has not performed an analysis of RA acquired from resources through the Cost Allocation Mechanism (CAM) or designated any particular resource type as including CAM resources. WCE will pay for its allocated share of resources subject to the CAM as necessary in the future.

Required and Optional Portfolios

WCE evaluated two "Conforming Portfolios:" one that addresses the WCE's proportional share of the 46 MMT GHG target, and another that addresses WCE's proportional share of a 38 MMT target. Each Conforming Portfolio is defined based on WCE's assigned load forecast and is consistent with the Commission-adopted Reference System Portfolio according to the following criteria:

- For the 46 MMT conforming portfolio, achieves emissions equal to the WCE's 46

MMT 2030 GHG Emissions Benchmark.

- For the 38 MMT conforming portfolio, achieves emissions equal to or less than the WCE’s 38 MMT 2030 GHG Emissions Benchmark.

GHG Emissions Benchmark

WCE has calculated its assigned 2030 GHG Emissions Benchmark target adopted by the Commission for the electric sector. As required by the Administrative Law Judges' (ALJ) Ruling on April 15, 2020, WCE’s target benchmark is calculated using the CSP Calculator. WCE notes that GHG emissions from behind the meter (BTM) resources are counted toward its GHG benchmark despite no requirement that WCE reduce behind the meter emissions. Consistent with the Commission’s direction, WCE has adjusted the GHG benchmark so that there is room to account for BTM resource emissions. The GHG benchmarks provided below are the maximum emissions allowed through direct WCE procurement.

Table 3. 2030 GHG Emissions Benchmark and Portfolio Results

	46 MMT Conforming Portfolio	38 MMT Conforming Portfolio
Benchmark MMT/Year CO2 Including BTM CHP	0.286	0.237
Benchmark MMT/Year CO2 Excluding BTM CHP	0.275	0.228

WCE’s compliance with this benchmark is calculated using the Clean Net Short methodology. This methodology will differ from the CEC’s Power Content Label (“PCL”) emissions calculation methodology. The difference in these two emissions calculations is due to differing treatments of emissions associated with contracted RPS qualified resources, conventional specified resources, and unspecified sources.

a. OBJECTIVES

WCE’s objectives in its IRP portfolio analysis are to provide two Conforming Portfolios to meet the CPUC’s directives in D.18-02-018, and to analyze a preferred portfolio that reflects the WCE Board’s approved procurement goals. The preferred portfolio focuses on WCE’s goal to reduce GHG emissions related to electricity use.

WCE policy, established by WCE’s founding documents and directed on an ongoing basis by WCE’s Board, guides development of its IRP and related procurement activities. WCE’s key resource planning policies are as follows:

1. Reduce GHG emissions and other pollutants associated with the electric power sector through increased use of renewable, GHG-free, and low-GHG energy resources.
2. Maintain competitive electric rates and increase control over energy costs through management of a diversified resource portfolio.
3. Benefit the local economy through investments in infrastructure, energy, and

- workforce development programs within WCE's service area.
4. Help customers reduce energy consumption and electric bills through investment in and administration of enhanced customer energy efficiency, cost-effective distributed generation, and other demand-side programs.
 5. Enhance system reliability through investment in supply- and demand-side resources.
 6. Actively monitor and manage operating and market risks to promote WCE's continued financial strength and stability.
 7. Support supplier diversity as permitted by law.

The IRP translates these broad policy objectives into a more specific energy procurement strategy, taking into consideration WCE's projected customer needs and existing resource commitments over the Planning Period. For each portfolio, GHG emissions are estimated using the CPUC's approved Clean System Power methodology. Due to WCE's recent launch and because so little procurement has been completed, these portfolios remain largely hypothetical and relies primarily on generic resource assumptions. Future IRPs and resource plans will be more detailed and reflect actual resources and contracts. This IRP was prepared and approved by the WCE Board of Directors on *August 12, 2020*.

b. METHODOLOGY

i. Modeling Tool(s)

WCE developed a spreadsheet model to create each portfolio and to estimate non-GHG emissions. To estimate GHG emissions for each portfolio, WCE relied on the CPUC's Clean System Power model for the respective 38MMT and 46MMT portfolios. It did not conduct any production cost modeling or portfolio optimization studies.

ii. Modeling Approach

For the two Conforming Portfolios, WCE must demonstrate consistency with the reference system portfolio assumptions per the CPUC's directives. WCE utilized the Clean System Power Calculator to develop its Conforming Portfolios for each GHG benchmark. WCE simply allocated the capacity by resource type for the CAISO system portfolio to WCE based on WCE's fraction of total energy within the CAISO system ("load ratio share"). The load ratio share was calculated for each year of the forecast period (namely 2020, 2022, 2026, and 2030). Energy production for each resource type in the portfolio was estimated using matching RESOLVE outputs for each of the conforming portfolios.

WCE acknowledges there are alternative ways to craft the Conforming Portfolios. For example, the only nuclear capacity left in CAISO in 2030 is SCE's share of Palo Verde Nuclear Generating Station. Therefore, one could assume that the only party with nuclear capacity in its resource mix in 2030 will be SCE. However, WCE did not wish to bias any particular resource type for purposes of the Conforming Portfolios for this IRP. Therefore, all resource types in the CAISO system are represented for both the 46 MMT and 38 MMT Conforming Portfolios.

iii. Assumptions

WCE Procurement Goals

Table 4 lays out WCE’s current expectations for green energy procurement. The targets presented are largely consistent with WCE’s Implementation Plan, with the RPS eligible target percentage extrapolated to be 62% by 2030, which is greater than the mandated 60% target. WCE plans to escalate each of these percentages over time so as to continue providing cleaner energy for its customers than SCE’s bundled service. The Board may, however, change its carbon-free and renewable energy targets over time in response to changing technology and cost.

Table 4. WCE Current Renewable Energy Targets

Green Energy Target	2020	2026	2030
% Choice Plan	37%	51.3%	62%
% System Power	37%	51.3%	62%
% Choice Plus Plan (green power)	100%	100%	100%

WCE has a long-term renewable energy requirement for 2020 equal to 0.25% and has procured contracts to meet this requirement. Additionally, WCE understands its requirements under SB 350, including the requirement to procure at least 65% of the state-mandated level of renewable energy under long-term contracts of at least 10 years in length. WCE’s initial power supply contracts are listed above. WCE has developed and maintains a 10-year projection of load and renewable energy requirements for the period of 2021-2030. For Compliance Period 4 (2021-24), WCE is currently forecasting a total of 2,489 gigawatt-hours of energy that will need to be procured from renewable generating resources, with 1,618 gigawatt-hours needing to be procured under a long-term agreement to meet WCE’s RPS compliance obligations.

In 2020, WCE intends to plan for the procurement of longer-term PCCl contracts. This is necessary to comply with the renewable procurement requirements of SB 350, and to account for the fact that new renewable generating facilities typically require long-term PPAs with terms ranging from 10 to 25 years.

WCE's goal is to reach a steady state of procurement in which it contracts 4% to 8% of its projected annual PCCl requirements each year via long-term contract. Doing so will provide benefits, including i) allowing WCE to steadily reduce its exposure to renewable energy and energy market price risks in a fashion similar to the programmatic hedging approach for Fixed-Price Block Energy, and ii) ensuring that WCE is in a position to make strategic procurement decisions and, if appropriate, commitments every year.

Given the multi-year compliance structure, and in consideration of the potential to partner with other CCAs or ESPs and run its own renewable solicitation following the 2020 program launch, WCE is well positioned to meet its procurement obligations.

Customer selection of the Choice Plus Plan rate option could require additional purchases of RPS compliant energy in the near term beyond that shown in the targets above, but WCE has not modeled any specific scenarios at this time. WCE will provide more specific information

about how adoption of Choice Plus Plan energy impacts procurement in future planning studies when more is known about the adoption of this product.

As WCE has just launched, it anticipates that its supply portfolio will increase in complexity over time. With respect to aligning generation and load profiles, WCE will evaluate its hourly load requirements throughout the year to capture both the seasonal and temporal needs of its customers. WCE recognizes that aligning renewable generation with its hourly load profiles will require the CCA to enter into multiple long-term supply agreements with different renewable technologies to capture the different generating profiles offered by each technology. A combination of baseload (*e.g.*, run-of-river small hydro, landfill gas or geothermal), off-peak (*e.g.*, wind) and peak (*e.g.*, solar+ storage) will be necessary to meet the Program's goals. Acquisition of long-duration storage will also be evaluated to help manage instances when there are forecast differences between generation and load, as well as to meet the energy storage requirements of SB 350, which require load serving entities to acquire at least 1% of 2020 peak demand from energy storage projects.

WCE recognizes the complexity of building a portfolio of resources to align generation and load profiles. Addressing this complexity, combined with the cost and risk reduction benefits of acquiring a diverse portfolio of renewable technologies and suppliers, will be a key component in WCE's planned strategy for future procurement.

WCE will continue to examine and estimate supply and customer demand and will structure its future procurement efforts to balance customer demand with resource commitments for its current launch, as well as the potential for future expansion as accurate load is collected post launch. This examination of customer demand and other market developments will help reduce costs and assist in meeting planned procurement for the period reflected in the 2020 RPS Procurement Plan.

III. Study Results

a. CONFORMING AND ALTERNATIVE PORTFOLIOS

WCE developed two portfolios:

1. **Conforming Portfolio 46 MMT:** This portfolio is based upon the Reference System Plan.
2. **Conforming Portfolio 38 MMT:** This portfolio is based upon the Reference System Plan.

The contents of each portfolio are described in more detail below.

b. PREFERRED CONFORMING PORTFOLIOS

46 MMT Conforming Portfolio (Preferred)

Table 6 below shows the allocated capacity (MW) of each resource type to WCE, including BTM solar generation and DRs allocated by the 2020 IEPR. WCE did not estimate equivalent capacity of energy efficiency investment, but the assumed energy reductions embedded in the load forecast are shown in Table 2 earlier.

Because resources in the conforming portfolio reflect the Reference System Plan, it includes resources that WCE would not necessarily have access to or sign contract for delivery. For example, the nuclear resources shown in the figure reflect WCE's load ratio share of Diablo Canyon in 2022, and of SCE's share of Palo Verde in all four years shown. As previously indicated, the analysis completed for this plan did not exclude any resource type within CAISO's system for allocation to WCE when creating its conforming portfolio, even though in practice the CCA would not contract for power from nuclear resources. The portfolio results are based on the Results Viewer for RESOLVE Output, which differs from the Clean System Power output. The results show storage resources required under the AB 2514 procurement mandate of 1% of 2020 peak load. Since 2020 peak demand is forecasted to be 477 MW, the 46 MMT Conforming Portfolio includes a minimum of 4.8 MW of lithium ion battery storage for 2020. In 2030, the conforming portfolio reflects WCE's load ratio share of new battery storage equal to 94.3 MW.

Figure 1. 46 MMT Conforming Portfolio Capacity Total Resource Summary

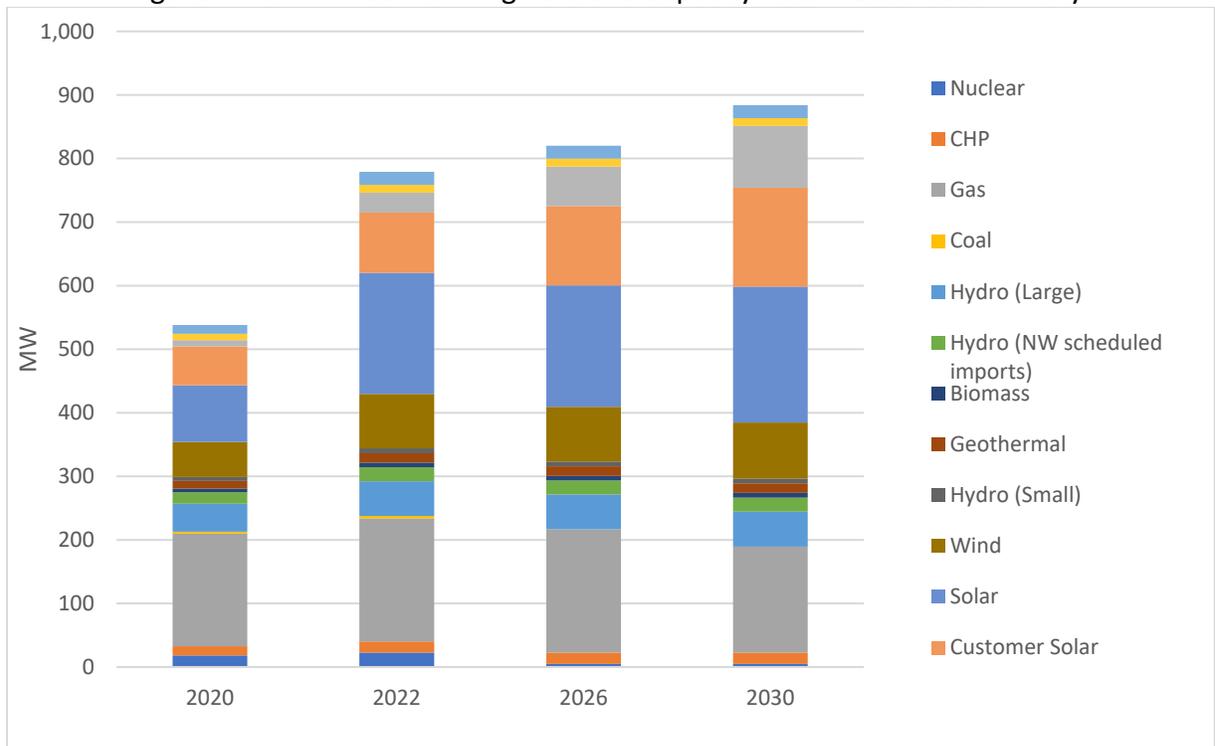
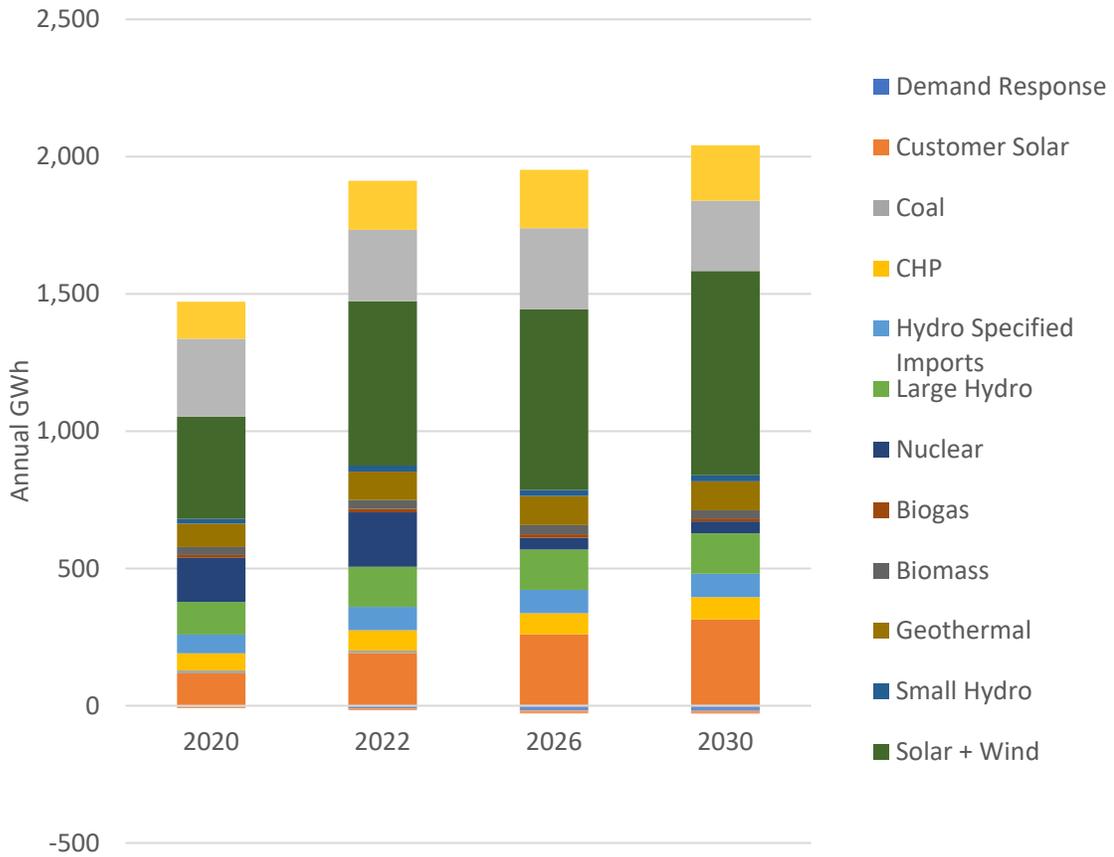


Figure 2 shows the conforming portfolio broken down by resource type on an energy (GWh) basis, including net imports. Includes estimated curtailment.

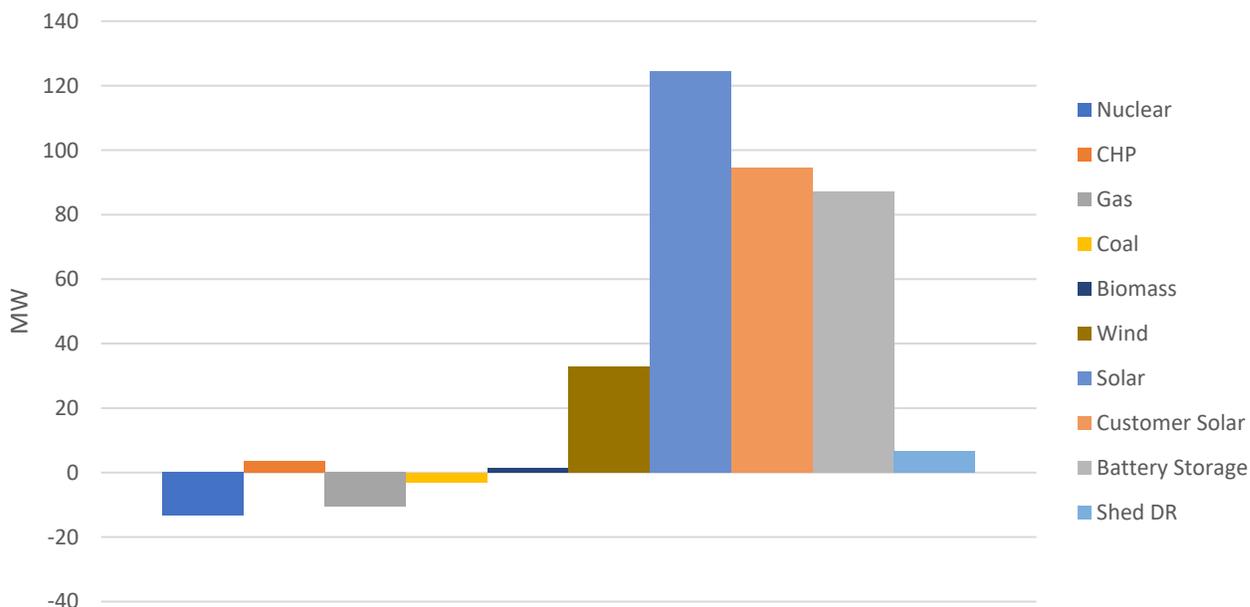
Figure 2. 46 MMT Conforming Portfolio Energy by Resource Type



The conforming portfolio reflects the composition output by RESOLVE for the CAISO system. It predicts growth in storage resources, geothermal, and especially solar generation.

Figure 3 shows incremental energy based on WCE’s load ratio share of new capacity per RESOLVE’s classification. This also includes customer solar generation capacity incremental to 2020 levels. As previously indicated, customer solar generation reflects default assumptions in the Clean System Power tool. Currently, there are approximately 14,700 NEM service accounts within WCE territory. NEM customer exports to the grid were 196 GWh in 2019. WCE does not have an estimate of total BTM generation capacity or energy production in WCE’s service territory. Future IRPs will reflect actual BTM capacity to the extent data becomes available.

Figure 3. 46 MMT Conforming Portfolio New Capacity by Resource Type



There is a significant reduction in gas and nuclear generation and a significant rise in renewable generation, especially new solar resources. For the remaining gas and nuclear generation, WCE assumes these resources remain in the portfolio because they are the optimal resources to meet CAISO’s needs under the constraints input into RESOLVE. There is also a significant addition of storage; all new storage modeled is lithium (Li) ion battery technology or reported separately as pumped storage.

Table 5 is an excerpt from the Clean System Power tool dashboard, showing that emissions attributed to WCE’s conforming portfolio under the Clean Net Short method. All RPS-eligible resource types and BTM solar were input into the “Capacity Inputs” section of the tool. No reduction was made to reflect any assumption of PCCl resources versus other types. The 3.4 MW of new lithium ion battery storage needed to meet state mandates was also included, as was WCE’s load ratio share of all new lithium ion battery storage in 2030 (94.3 MW). All other resource types are assumed to be part of system power. The result is that the conforming portfolio will produce 0.275 MMT of GHG emissions in 2030, which is below the 2030 benchmark of 0.286 MMT.² The above target emissions level for 2030 is due to the inclusion of WCE’s load share of Combined Heat and Power (CHP) resources. Without CHP, the 2030 CO₂ emissions level is 0.242 MMT.

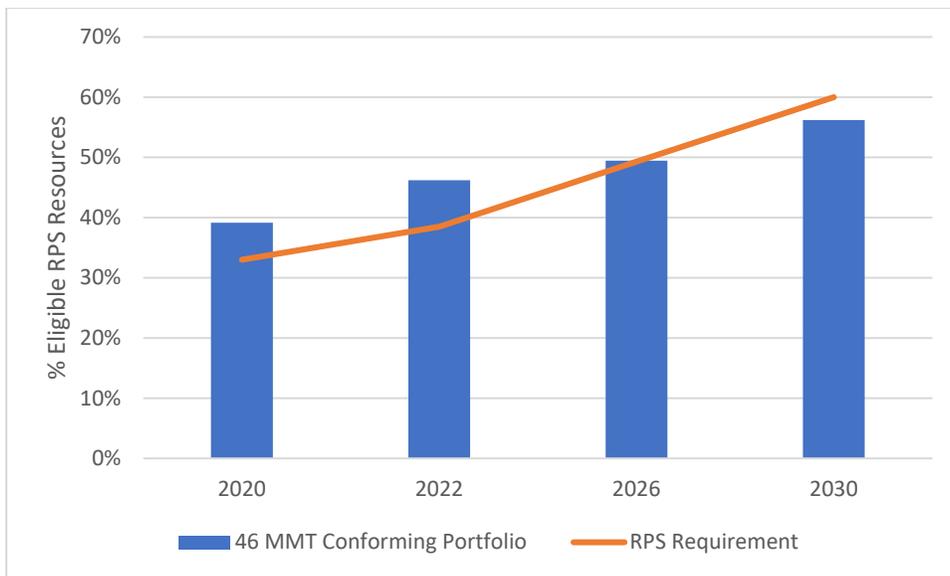
² R.16-02-007 ALJR Finalizing Load Forecasts and GHG Emissions Benchmarks for Individual 2020 Integrated Resource Plan Filings and Assigning Procurement Obligations Pursuant to Decision 19-11-016. Page 6 Table 1. <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M333/K160/333160852.PDF>

Table 5. 46 MMT Conforming Portfolio GHG Emissions Results

Emissions Total	Unit	2020	2022	2026	2030
CO ₂	MMt/yr	0.230	0.235	0.281	0.275
PM _{2.5}	tonnes/yr	21	24	27	26
SO ₂	tonnes/yr	8	8	9	8
NO _x	tonnes/yr	53	61	67	64

Although WCE has not done a detailed analysis of RPS compliance—which would involve more consideration of eligible loads, REC banking, eligible resources not modeled in RESOLVE, and REC procurement standards—it has performed a simple calculation of the percent of supply-side resources in the portfolio that are RPS-compliant according to RESOLVE. This provides an indicator of whether the RPS goals will be met using this portfolio. As shown in Figure 4, the percent of RPS-compliant generation exceeds the target in 2020 and 2022, meets the 2026 requirement, and is 4% short of the 2030 requirement. When negative production from storage projects is removed from the calculating, the 2030 RPS share remains 2% short of the 60% requirement. A more detailed analysis of PCC₃ RECs, banking, and minimum procurement quantities will inform WCE's actual procurement as WCE remains committed to meeting or exceeding all RPS goals set by the state.

Figure 4. 46 MMT Conforming Portfolio Supply-Side Generation that is RPS Eligible Compared to RPS Eligible Generation Target



The portfolio results provided here are targeted at providing enough energy to meet WCE's load. As noted above, WCE expects to procure RA separately with the specifics being dependent on the outcome of Rulemaking 17.09.020. Given the resource mix is also adequate for meeting RA requirements for CAISO according to RESOLVE, WCE anticipates its load

share of the RESOLVE output will meet WCE’s RA requirements. Additionally, WCE will continue to meet its RA planning obligations through the separate RA process.

38 MMT Conforming Portfolio (Preferred)

Figure 5 below shows the allocated capacity (MW) of each resource type to WCE, including BTM solar generation and DR as allocated by the 2020 IEPR. WCE did not estimate equivalent capacity of energy efficiency investment, but the assumed energy reductions embedded in the load forecast are shown in Table 2 in Section II of this report.

Because resources in the conforming portfolio reflect the Reference System Plan, it includes resources that WCE would not necessarily have access to or sign contract for delivery. For example, the nuclear resources shown in the figure reflect WCE's load ratio share of Diablo Canyon in 2020 and 2022, and of SCE's share of Palo Verde in all four years shown. As previously indicated, the analysis completed for this plan did not exclude any resource type within CAISO's system for allocation to WCE when creating its conforming portfolio, even though in practice they would not contract for power from nuclear resources. It also includes additional storage resources to reflect the AB 2514 procurement mandate of 1% of 2020 peak load. Since 2020 peak demand is forecasted to be 477 MW, the 38 MMT Conforming Portfolio includes 3.8 MW of lithium ion battery storage beginning in 2020. In 2030, the 38 MMT conforming portfolio reflects WCE’s load ratio share of new lithium ion battery storage equal to 122 MW.

Figure 5. 38 MMT Conforming Portfolio Capacity by Resource Type

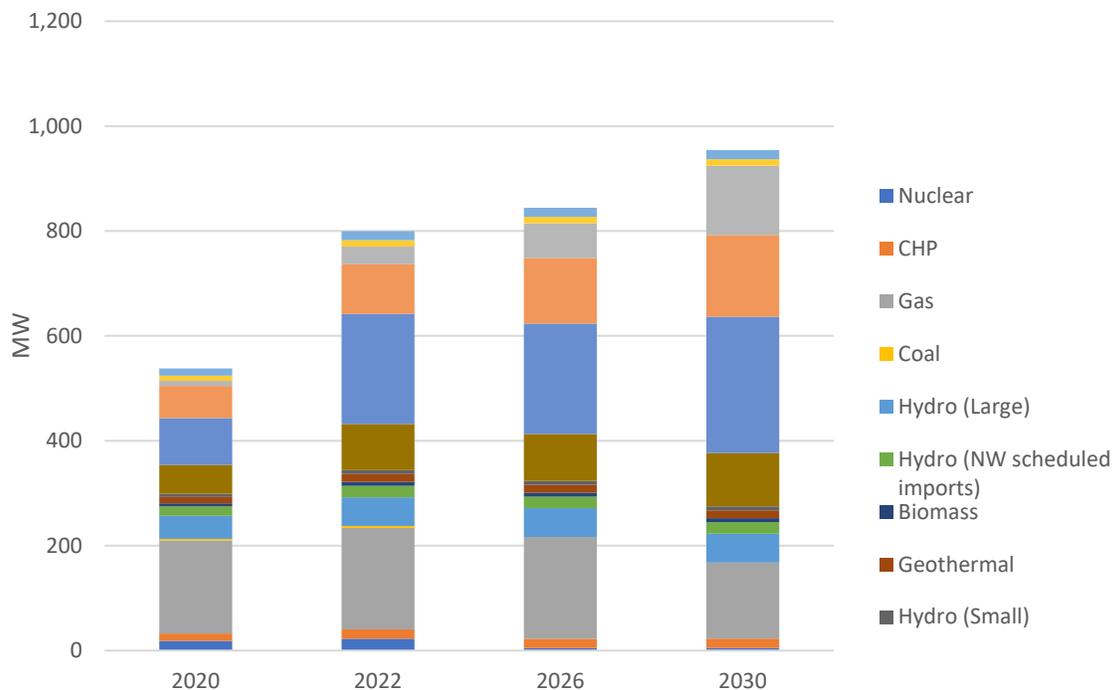
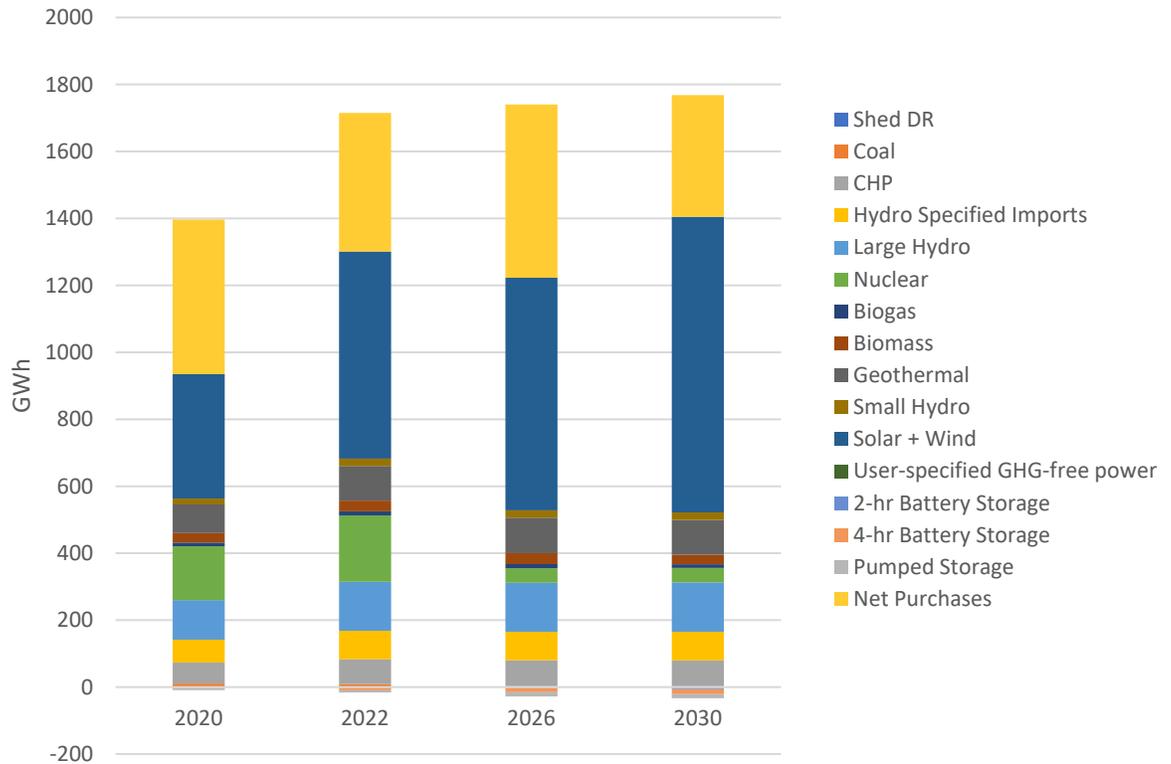


Figure 6 below shows the conforming portfolio broken down by resource type on an energy (GWh) basis, including net imports. This chart assumes service begins April of 2020, meaning 2020 is a partial year.

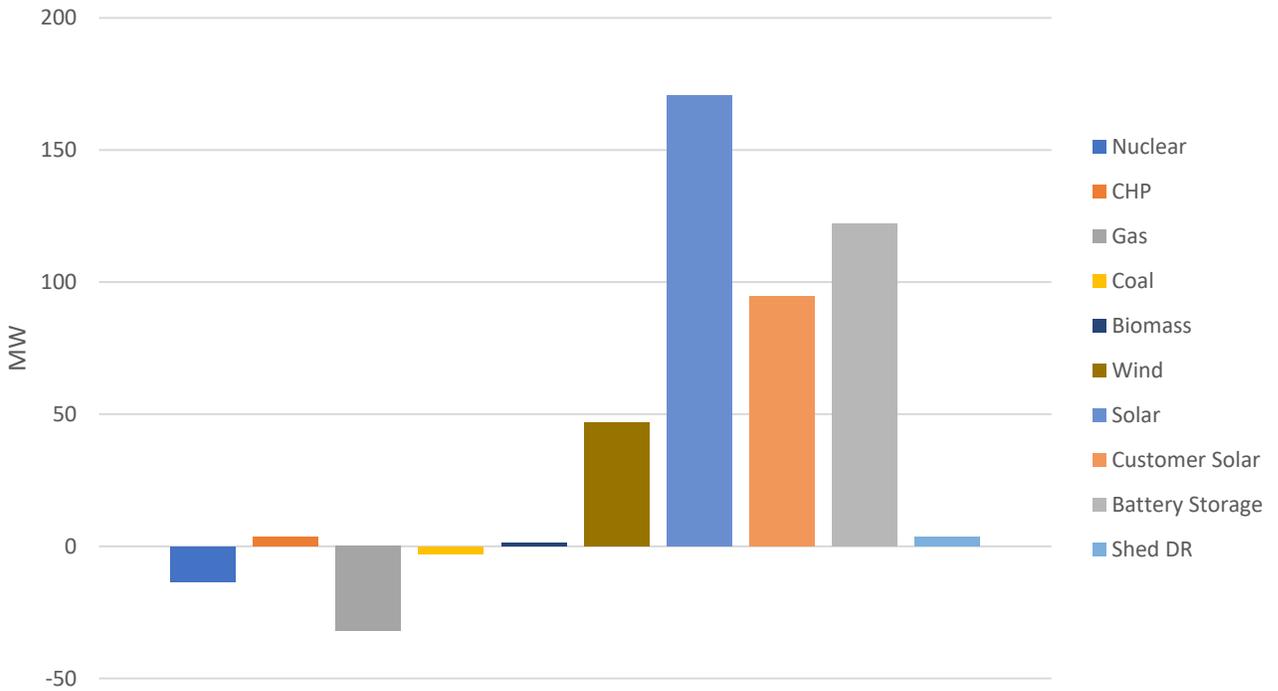
Figure 6. 38 MMT Conforming Portfolio Energy by Resource Type



The conforming portfolio reflects the composition output by RESOLVE for the CAISO system. It predicts growth in storage resources, geothermal, and especially solar generation.

Figure 7 below shows the capacity that is new based on WCE’s load ratio share of new capacity per RESOLVE’s classification. This also includes customer solar generation capacity incremental to 2020 levels.

Figure 7. 38 MMT Conforming Portfolio New Capacity by Resource Type



There is a significant reduction in gas and nuclear generation and a significant rise in renewable generation, especially new solar resources. For the remaining gas and nuclear generation, WCE assumes these resources remain in the portfolio because they are the optimal resources to meet CAISO’s needs under the constraints input into RESOLVE. There is also significant addition of storage; all new storage modeled is lithium (Li) ion battery technology.

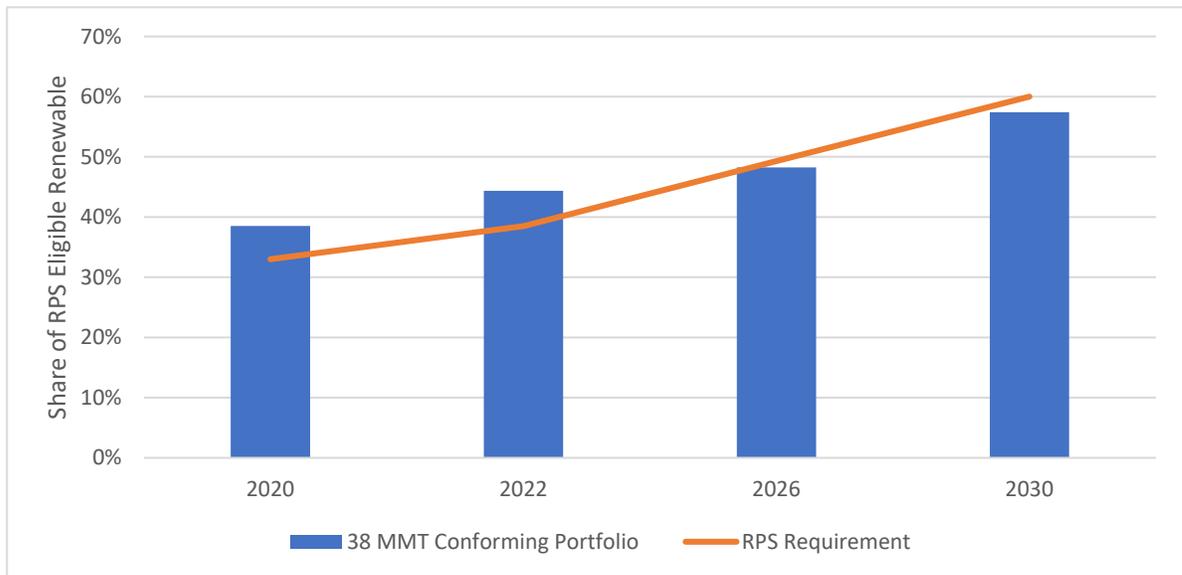
Table 6 is an excerpt from the Clean System Power tool dashboard, showing that emissions attributed to WCE’s 38 MMT conforming portfolio under the Clean Net Short method. All RPS-eligible resource types and BTM solar were input into the “Capacity Inputs” section of the tool. No reduction was made to reflect any assumption of PCCr resources versus other types. The 4.8 MW of new lithium ion battery storage needed to meet state mandates was also included. All other resource types are assumed to be part of system power. The result is that the conforming portfolio will produce 0.228 MMT of GHG emissions in 2030, which is below the 2030 benchmark of 0.237 MMT (including BTM CHP).

Table 6. 38 MMT Conforming Portfolio GHG Emissions Results.

Emissions Total	Unit	2020	2022	2026	2030
CO ₂	MMt/yr	0.230	0.228	0.267	0.228
PM _{2.5}	tonnes/yr	21.5	23.8	26.1	23.4
SO ₂	tonnes/yr	7.5	8.4	8.8	7.7
NO _x	tonnes/yr	53.2	60.1	65.5	59.2

Figure 8 shows the percent of RPS compliant generation exceeds the target in in 2020 and 2022 and is within one percentage point of the target in 2026 and 2030. When negative energy production from storage resources is removed, the 38 MMT Conforming Portfolio meets state mandated RPS. PCC3 Renewable Energy Credits (RECs) may be used to meet short-term gaps due to unanticipated load, under generation, curtailment, or other risk factors. WCE remains committed to meeting or exceeding all RPS goals set by the state.

Figure 8. 38 MMT Conforming Portfolio Supply-Side Generation that is Eligible Compared to RPS Eligible Generation Target



The portfolio results provided here are targeted at providing enough energy to meet WCE’s load. As noted above, WCE expects to procure RA separately. Given that the resource mix is also adequate for meeting RA requirements for CAISO according to RESOLVE, WCE anticipates it will provide adequate RA for all LSEs.

c. GHG EMISSIONS RESULTS

WCE utilized the CSP calculator to report the GHG emission targets in Table 7 below for each Conforming Portfolio.

Table 7. GHG Emissions Results

Emissions Total	Unit	2020	2022	2026	2030
46 MMT Conforming Portfolio					
CO ₂	<i>MMt/yr</i>	0.230	0.235	0.281	0.275
PM _{2.5}	<i>tonnes/yr</i>	21.5	24.1	26.8	26.4
SO ₂	<i>tonnes/yr</i>	7.5	8.5	9.0	8.2
NO _x	<i>tonnes/yr</i>	53.1	60.7	66.8	63.9
38 MMT Conforming Portfolio					
CO ₂	<i>MMt/yr</i>	0.230	0.227	0.265	0.225
PM _{2.5}	<i>tonnes/yr</i>	21.5	23.8	26.1	23.3
SO ₂	<i>tonnes/yr</i>	7.5	8.4	8.8	7.7
NO _x	<i>tonnes/yr</i>	53.2	60.1	65.5	59.1

d. LOCAL AIR POLLUTANT MINIMIZATION AND DISADVANTAGED COMMUNITIES

i. Local Air Pollutants

Emissions calculated via the CSP for each Conforming portfolio are provided in Table 8 below.

Table 8. GHG Emissions Results

Emissions Total	Unit	2020	2022	2026	2030
46 MMT Conforming Portfolio					
CO ₂	<i>MMt/yr</i>	0.230	0.235	0.281	0.275
PM _{2.5}	<i>tonnes/yr</i>	21.5	24.1	26.8	26.4
SO ₂	<i>tonnes/yr</i>	7.5	8.5	9.0	8.2
NO _x	<i>tonnes/yr</i>	53.1	60.7	66.8	63.9
38 MMT Conforming Portfolio					
CO ₂	<i>MMt/yr</i>	0.230	0.227	0.265	0.225
PM _{2.5}	<i>tonnes/yr</i>	21.5	23.8	26.1	23.3
SO ₂	<i>tonnes/yr</i>	7.5	8.4	8.8	7.7
NO _x	<i>tonnes/yr</i>	53.2	60.1	65.5	59.1

ii. Focus on Disadvantaged Communities

WCE’s service territory lies within Riverside County’s subregion, bordering Orange County to the West, San Bernardino County to the North, and San Diego and Imperial Counties to the South. WCE member cities include Canyon Lake, Eastvale, Hemet, Jurupa Valley, Norco, Perris, and Wildomar.

Disadvantaged Communities are defined as the top 25% scoring areas from CalEnviroScreen, along with other areas with high amounts of pollution and low populations. CPUC Decision D. 18-02-018 directs LSEs to use the CalEnviroScreen mapping tool to identify Disadvantaged Communities served. It also authorizes SB535 definitions to identify Low Income Communities. Under SB535 definition, there are 18 census tracts identified as Disadvantaged Communities: 8 in Perris, 3 in Hemet, and 7 in Jurupa Valley. Under AB1550 definition, WCE provides service to 31 census tracts identified as Low-Income Communities: 19 in Hemet, 3 in Jurupa Valley, and 9 in Perris.

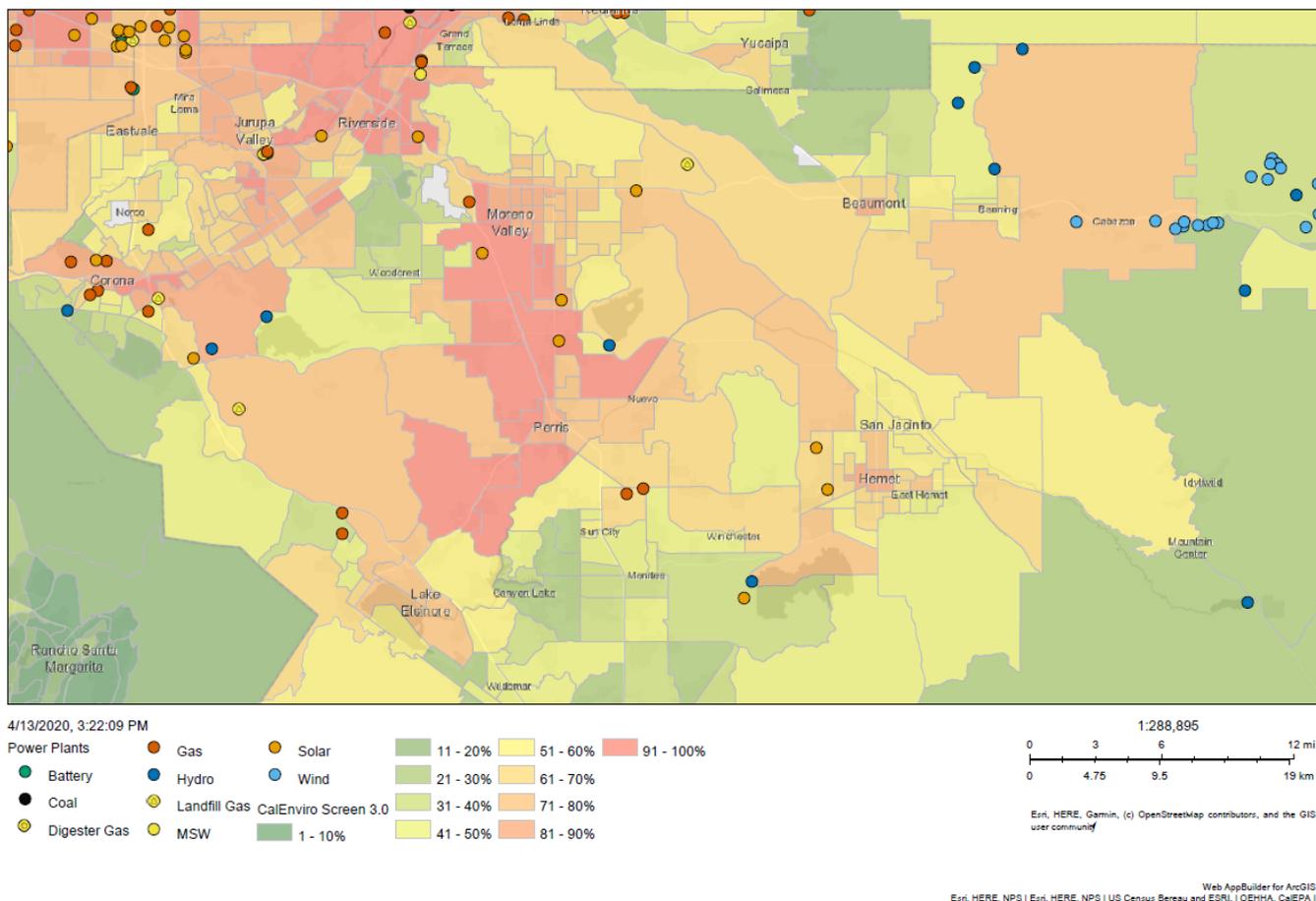
Table 9. Disadvantaged Communities in WCE’s Service Area

County	City/Town	Census Tracts	CalEnviroScreen 3.0 Percentile	Population
Riverside	Perris	6065042007	77.6%	4,339
Riverside	Perris	6065042010	93.9%	5,887
Riverside	Perris	6065042620	90.8%	10,463
Riverside	Perris	6065042706	79.9%	8,393
Riverside	Perris	6065042800	87.7%	9,260
Riverside	Perris	6065042901	91.6%	7,385
Riverside	Perris	6065042902	91.8%	4,930
Riverside	Perris	6065042904	94.7%	9,352
Riverside	Hemet	6065043401	85.1%	5,791
Riverside	Hemet	6065043405	80.9%	4,217
Riverside	Hemet	6065043507	77.4%	6,700
Riverside	Jurupa Valley	6065040102	96..0%	4,630
Riverside	Jurupa Valley	6065040303	82.1%	3,243
Riverside	Jurupa Valley	6065040402	86.1%	4,224
Riverside	Jurupa Valley	6065040403	83.4%	5,801
Riverside	Jurupa Valley	6065040405	76.5%	5,353
Riverside	Jurupa Valley	6065040501	89.9%	6,878
Riverside	Jurupa Valley	6065040502	89.3%	6,202

The GHG emissions reductions and air quality improvements associated with the preferred portfolio are expected to benefit the Low Income and Disadvantaged Communities in the region, even though these communities may be outside the WCE territory.

The western Riverside County geography and climate creates excellent conditions for renewable energy development. There is a significant amount of generation already in the western Riverside County region. This includes several wind farms, multiple solar farms and natural gas-fired plants, as well as multiple hydroelectric plants. The map below from the CEC indicates the locations of Disadvantaged Communities in WCE service area as well as the location of generating stations.

Figure 9. California Electric Infrastructure WCE Region
California Electric Infrastructure



e. COST AND RATE ANALYSIS

WCE intends to allocate approximately 2% of its available budget to rate savings. This is estimated to translate into a targeted total customer rate savings of \$5.4 million per year on average over the first five years of operation, or \$27 million in cumulative rate savings over a ten-year period. These rate savings are predicated on forecast SCE generation rates, exit fees, and escalating power supply costs. WCE anticipates that increases in RA costs will be the primary driver for rate impacts. These increased RA costs will be offset to a degree by decreasing technology costs. WCE plans to enter into long-term contracts for renewables; similar contracts have been put into place for other CCAs at prices well below current market costs. As WCE relies less on system energy, WCE may increase its share of lower cost long-term renewables and storage resources. These resource costs will help balance the cost of increasing RA. WCE will continually monitor the market as part of its hedging strategy to minimize rate impacts of the Conforming Portfolio.

Program rates are ultimately approved by the Board, which retains the authority to modify Program policies from time to time at its discretion.

f. SYSTEM RELIABILITY ANALYSIS

The RA program requires LSEs to demonstrate specific quantities of system, local and flexible capacity in the year-ahead and month-ahead time frames. WCE forecasts net RA requirements using RMR/CAM allocation assumptions and ELCC/NQC capacity adjustments. WCE plans to purchase/sell RA depending on its monthly positions. WCE has provided its current RA-only and Energy plus RA contracts in the Resource Data Template. SCE is providing WCE’s system RA requirements for 2020, and SCE will also transfer Local RA resources to WCE to satisfy WCE’s Local RA obligations in 2021 and 2022. WCE will release and RFO for remaining 2021 RA obligations in September 2020.

We expect to maintain a significant open System RA position, especially as the ELCCs of solar, wind, and storage resources decline in later years. Including a 15% reserve margin over our forecast peak load, and the projected declines in ELCC for our resources, we anticipate open positions in excess of our existing and planned resources beginning in 2023. In the 38 MMT Portfolio, our largest anticipated open System RA position is 63 MW in 2030. WCE is aware of its RA requirements over the planning period and that its load share of the RSP is insufficient to meet its requirements alone. WCE’s load share of the RSP resources is calculated based on energy which is less than 0.8% of the CAISO system energy demand. WCE’s share of CAISO coincident peak demand, however, is estimated at over 1.2%. Therefore, WCE’s share of the RA available from the RSP is higher than what is suggested using energy as the allocator for RSP resources. In particular, for the 46 MMT portfolio, WCE’s resulting NQC in 2023 from its energy share of the RSP is 420 MW (September). This is significantly lower compared with WCE’s share of RSP resource NQC calculated based on WCE’s share of coincident peak demand of 655 NQC MW. The 655 MW NQC from RSP resources plus 117 NQC CAM resources results in a long position in 2023 for RA of over 170 NQC MW. A similar analysis for the 38 MMT portfolio results in a long position of nearly 180 NQC MW in September 2023. This trend persists through the end of the planning period.

WCE will continue to fully comply with all RA requirements, and will continue its practice of procuring long-term, multi-year, year-ahead and month-ahead RA in accordance with requirements and Energy Risk Management Policy.

Table 10. 46MMT Preferred Conforming Portfolio

System Reliability Progress Tracking Table (NQC MW) for month of September by contract status, 46 MMT portfolio	ELCC type	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
online	unknown	366	337	202	117	117	118	118	119	119	120	121
review	battery	-	3	3	3	3	3	3	3	3	3	3
review	unknown	-	11	11	11	11	11	11	11	11	11	11
planned_existing	biomass	5	6	6	6	6	6	6	6	6	6	6
planned_existing	cogen	11	13	14	14	14	14	14	14	14	14	14
planned_existing	geothermal	10	11	12	12	12	12	12	12	12	12	12
planned_existing	hydro	48	54	60	60	60	60	60	60	60	60	60
planned_existing	thermal	173	177	195	196	196	194	192	192	193	193	193
planned_existing	nuclear	18	20	23	23	14	9	5	5	5	5	5
planned_existing	psh	10	11	12	12	12	16	20	20	20	20	20
planned_new	wind_low_cf	7	8	11	11	14	15	17	17	17	18	18
planned_new	battery	10	30	39	47	56	66	75	76	76	77	77
planned_new	solar	14	18	23	25	22	19	16	16	17	17	18

Table 11. 38MMT Preferred Conforming Portfolio

System Reliability Progress Tracking Table (NQC MW) for month of September by contract status, 38 MMT portfolio	ELCC type	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
online	unknown	366	337	202	117	117	118	118	119	119	120	121
review	battery	-	3	3	3	3	3	3	3	3	3	3
review	unknown	-	11	11	11	11	11	11	11	11	11	11
planned_existing	biomass	5	6	6	6	6	6	6	6	6	6	6
planned_existing	cogen	11	13	14	14	14	14	14	14	14	14	14
planned_existing	geothermal	10	11	12	12	12	12	12	12	12	12	12
planned_existing	hydro	48	54	60	60	60	60	60	60	60	60	60
planned_existing	thermal	173	177	195	195	194	193	192	188	185	181	177
planned_existing	nuclear	18	20	23	18	14	9	5	5	5	5	5
planned_existing	psh	10	11	12	15	19	22	25	25	25	25	25
planned_new	wind_low_cf	7	9	12	12	14	17	19	20	20	21	21
planned_new	battery	10	22	39	52	58	64	70	74	78	82	86
planned_new	solar	14	18	23	23	21	18	15	14	13	11	10

g. HYDRO GENERATION RISK MANAGEMENT

WCE’s conforming portfolios are simply a load share of the RSP. The RSP includes large in-state hydropower. While WCE does not directly rely on hydropower generation, variances in hydro generation impact the CAISO system overall. Low water years can result in higher market prices affecting surplus sales revenue or increasing balancing costs. WCE hedges its energy purchases to mitigate impacts of short-term market price variability. WCE is targeting a rate stabilization reserve level equal to a minimum of 120 days of operating costs. These reserves may be called upon to the extent that WCE’s hedging strategy increases the cost of power due to drought conditions. Reduced hydropower generation may lead to reduced levels of curtailment, as curtailment often occurs in high water high wind scenarios.

WCE has not conducted a quantitative analysis of the conforming portfolios with regard to hydropower as WCE does not plan to directly rely on these resources. To the extent that market purchases or unspecified resources include hydropower, WCE’s hedging strategy and portfolio diversification properly hedge for hydropower and other fuel-based risks.

h. LONG-DURATION STORAGE DEVELOPMENT

WCE has joined with 10 other CCAs in a joint RFI for long-duration storage. Storage technologies requested include battery technologies, pumped storage, and other. Resource online dates are expected to be prior to January 1, 2026. Subsequently, WCE has joined a subsequent joint-CCA RFO scheduled to be released September 2020. WCE will continue to evaluate adding storage to its procurement process especially where wind or solar resources may be combined with storage technologies. WCE recognizes the value of long-term and short-term storage resources as the penetration of renewable capacity increases and the need for RA increases.

i. OUT-OF-STATE WIND DEVELOPMENT

Since WCE is still in the early stages of procurement, it has not actively and specifically pursued out of state wind development. WCE recognizes the value of out of state wind resources and will continually evaluate the potential to invest in wind resources where current and proposed transmission resources permit energy delivery to its service area.

j. TRANSMISSION DEVELOPMENT

The resources WCE is currently contracted with are those that are located in close proximity of its service area or have been previously used to serve customers on SCE's system. WCE's near-term procurement goals focus on local or existing resources. WCE anticipates that future resources may be located outside of the local transmission area and will update the IRP as more planning information is known.

IV. Action Plan

This section presents WCE's planned activities for the next 1-3 years as identified in its CCA Implementation Plan and the 2020 Renewables Portfolio Standard Procurement Plan.

PROPOSED ACTIVITIES

WCE's share of the RSP indicates several action items WCE will need to take in the near-term to ensure WCE meets its goals for renewable energy, reliability, and low rates. WCE's share of the 38 MMT RSP will add nearly 60 MW of battery storage by 2030, 160 MW solar and wind resources, 86 GWh of energy efficiency, and 311 GWh of customer solar by 2030. To this end, WCE is pursuing the following activities in the near term.

Regional Renewable Resources

WCE has a goal of supporting and developing local renewable resources. Additional local supply supports WCE's objective of greater electrical security given limited transmission access to the larger CAISO grid. Spending money on local supply also supports the objective of supporting the local economy. However, there are some obstacles to procuring local renewable supply.

WCE therefore proposes to procure regional renewable power as financial circumstances allow, and supplement with cheaper, non-local renewables available on a short-term bilateral basis. This may include utility-scale solar, wind, geothermal or other forms of renewable supply. WCE's wholesale services adviser has issued a solicitation for Category 1 and 2 power and RECs from marketers as needed to meet WCE's RPS obligations and renewable percentage objectives described earlier. WCE plans to approve confirmations at the August 2020 Board Meeting resulting from the solicitation.

WCE will make use of the wholesale service advisor's enabling agreements – with Western System Power Pool, Edison Electric Institute, and International Swaps and Derivatives Association (WSPP, EEI and ISDA) – to transact with marketers on a short-term basis. As more local renewables are contracted, the need for short-term renewable supply will diminish. Planned mechanisms for procurement of local renewable energy include FIT for renewable energy systems with capacity less than 1 MW and with minimal on-site loads, and NEM arrangements like those offered by SCE for solar systems under 1 MW that principally serve on-site load.

Energy Efficiency

The CPUC oversees the allocation of energy efficiency funds for program implementation to each of the four investor-owned utilities in California: Pacific Gas & Electric, Southern California Edison, Southern California Gas Company, San Diego Gas & Electric; Regional Energy Networks, and CCAs. Energy efficiency programs were originally funded by the Public Goods Charge. With the expiration of that fund, the CPUC approved a [decision](#) in December 2011 to use a portion of the Procurement Energy Efficiency Balancing Account (PEEBA) to replace the PGC funding. Additionally, efficiency and other research and development programs are funded through the EPIC, which is collected from all customers.

WRCOG, which provides administrative and management services to WCE, already focuses on energy efficiency in western Riverside County. WRCOG currently receives funding through Southern California Gas Company to implement its Local Government Partnership. WRCOG also administers a Regional Streetlight program that has supported 11 jurisdictions acquire, retrofit, operate, and maintain of over 53,000 streetlights within western Riverside County. WRCOG is also currently working on developing a Business plan to start an Inland Regional Energy Network (REN) with San Bernardino Council of Government and Coachella Valley Association of Governments to administer Inland Empire tailored energy efficiency programs. WRCOG plans to continue its current efficiency work post WCE implementation, and develop additional efficiency programs that enhance, but do not duplicate, existing programs in its overall integrated demand side management strategies.

WCE may complete the CPUC application process for "elect to administer" and/or full administration of energy efficiency programs and use of funds collected through the existing EPIC surcharges paid by WCE customers. Additional details related to WCE's energy efficiency plan will be developed once WCE Program phase-in is underway and the financial viability of WCE is established.

Demand Response

DR programs provide incentives to customers to reduce demand upon request by the LSE (i.e., WCE), reducing the amount of generation capacity that must be maintained as infrequently used reserves. DR programs can be cost effective alternatives to capacity otherwise needed to comply with the RArequirements. The programs also provide rate benefits to customers who have the flexibility to reduce or shift consumption for relatively short periods of time when generation capacity is most scarce. Like energy efficiency, DR can be a win/win proposition, providing economic benefits to the electric supplier and customer service benefits to the customer.

WCE is interested in exploring the potential for DR within its service area. However, it is not clear at present how much potential there may be for effective DR. Other CCAs have initiated some prototype DR projects but have not found opportunities for large scale DR deployment to date. Two newly emerging areas of DR are electric vehicle and heat pumps with thermal storage combined with smart grid or timer control. WCE will explore the potential for fuel switching as a form of DR.

SCE offers several DR programs to its customers such as the Base Interruptible Program, the Demand Bidding Program, the Optional Binding Mandatory Curtailment Plan, and access to some DR aggregator programs. These may be available to WCE's customers as well.

Some existing CCAs provide access to these programs, while others do not. WCE will explore options for including DR programs into its overall integrated demand side management strategies. WCE recently went through a Request for Proposal process to examine Implementation of a Smart Thermostat Program to start. Due to the Initial startup and ongoing costs, WCE has elected to postpone moving forward with development, as It seeks funds to cover these costs.

Distributed Generation

WCE is strongly supportive of developing local renewable generation and has been in contact with a few developers on some potential projects. These projects are a few years away and if WCE officially becomes involved as any of them move forward, WCE will provide more information in future IRPs. One significant element of that objective is to incentivize the development of distributed generation, primarily rooftop and small-scale solar PV. WCE plans to implement NEM and FIT rate schedules which will be more remunerative than the comparable SCE schedules to encourage residents, businesses and developers to install more solar generation within the WCE service area. WCE's resource plan calls for several MWs of both NEM and FIT capacity to be developed within the first several years of operation.

The net metering rate allows PV customers to sell extra energy generated by their PV systems at the retail rate, which is significantly higher than the average procurement cost for energy. For customers, NEM provides a financial incentive to install solar PV. Because WCE customers are likely to be using and benefitting from SCE's NEM rate schedule, WCE will continue to offer this advantageous rate to continue supporting existing and encouraging additional PV installations.

There are clear environmental benefits and strong customer interest in distributed PV systems. To support such systems, WCE may provide direct financial incentives from revenues funded by customer rates to further support use of solar power and/or other renewable resources within the local area. With regard to WCE's NEM program, WCE's adopted rate allows participating customers to sell excess energy produced by customer-sited renewable generating sources to WCE. Such a program is consistent with principles identified in Assembly Bill 920 ("AB 920"), which directed the CPUC to establish and implement a compensation methodology for surplus renewable generation produced by NEM facilities located within the service territories of California's large investor owned utilities, including SCE. WCE has chosen to offer enhanced compensation structures, relative to those implemented because of AB 920, as part of the direct incentives that may be established to promote distributed generation development within the region. To the extent that incentives offered by WCE improve project economics for its customers, it is reasonable to assume that the penetration of distributed generation within the region would increase. Additionally, WCE is launching a study to determine where and what type and what volume of DR will be required in the WCE region for grid reliability.

Other Clean Energy Programs

WCE’s communities, on its own and through the Western Riverside Council of Governments (WRCOG), have been and will continue to be active participants in local environmental planning, including electric service improvements. Notably, during the past several years, the municipalities within WCE’s service area have conducted detailed GHG inventory analyses and adopted municipal energy action plans designed to reduce energy usage, promote energy efficiency, and support the deployment of electric vehicles through 2020. Cities have adopted Climate Action Plans, with a goal to reduce GHG emissions to 1990 levels.

k. PROCUREMENT ACTIVITIES

Table 12. Short Term Procurement Activities

Product Year	Product	
	Resource Adequacy	Energy/RPS/Carbon-Free
2020	<ul style="list-style-type: none"> Contract with SCE for 2020-2022 obligations 	<ul style="list-style-type: none"> Baseload conventional Energy via two RFOs 34,000 MWh CAT 3 RECs. 10.5 Year Contract RFO for Short-term PCC1 and PCC2 RECs delivered in 2020
2021	<ul style="list-style-type: none"> RA RFO to be issued Q3 2020 	<ul style="list-style-type: none"> Demand Response (DR) Program RFI Issued Q2 2020 RFO for long-term PCC1 resources scheduled release in September 2020
2021 and later		<ul style="list-style-type: none"> Joint RFI Long-Duration Storage Issued Q2 2020. RFO Expected September 2020 with final negotiations by May 2021. Online dates expected before January 1,2026

I. POTENTIAL BARRIERS

WCE has identified some regulatory and market risks associated with acquiring resources to meet the GHG-free and renewable procurement goals established by its local governing board, and the goals set forth by SB 350. The risks and the associated impact analysis are below:

Resource Adequacy

The recent decision by the Commission to delegate Central Procurement Entity obligations to PG&E and SCE create uncertainty in the RA market. Specific market disruptions include the following:

- WCE’s planning effort assumes that the CCA is fully compliant with the CPUC and CAISO’s RA requirements, and WCE is investing significant financial resources in RA resources to achieve those requirements. SCE, acting as a Central Procurement Entity (CPE), has incentive to hold onto excess RA resources causing market distortions. The final rulemaking around the CPE is not finalized at the time of this filing, creating additional uncertainty in both price and availability.
- Many CCAs, including WCE, are exploring new capacity resources that can mitigate the use of fossil fuel resources while meeting RA obligations. Depending on the final CPE rulemaking, procurement incentives for GHG-free resources for use in RA obligations may be affected.
- Renewable portfolio standards, GHG reduction goals, and retirement of nuclear and fossil fuel will create additional need for RA.

COVID-19 Impacts

The medium and long-term impacts of COVID 19 are yet unknown. Some considerations considering COVID-19 are provided below.

- At the time of this filing, credit markets have been negatively impacted by the COVID-19 pandemic. While interest rates remain at all-time lows, the ability for entities to secure financing has been limited. Limited financing may reduce the ability of developers to respond appropriately to RFIs and RFOs, thereby reducing the availability of RPS eligible resources.
- Load shapes have changed due to California’s stay-at-home orders and continued work-from-home guidelines. Commercial and industrial loads are effectively lower and residential usage during the day mirrors that of Sundays. The combined impact is lower overall loads and risk of over-procurement for energy and RA resources. Additionally, sustained changes in load profiles could impact future IEPR load forecasts. Furthermore, installations of energy efficiency measures may be slowed as contractors were unable to continue work for a period of time.
- Potential delays in construction from COVID-19 restrictions may impact future load growth.
- Rate setting will be impacted if revenues shift from commercial and industrial loads to residential. The cost-basis for residential rate setting will be impacted if there are long-term impacts to usage profiles as the workforce shifts toward a work-at-home model.
- PCIA rates will also be impacted as market prices continue to be low.
- CAISO curtailments were historically high during the months of April and May 2020 due to snowpack levels and reduced demand. Reductions in demand, absent investments in storage, could result in an extended curtailment period
- A second wave of COVID -19 infections, along with the timing of economic recovery, will also create uncertainty in the near future.

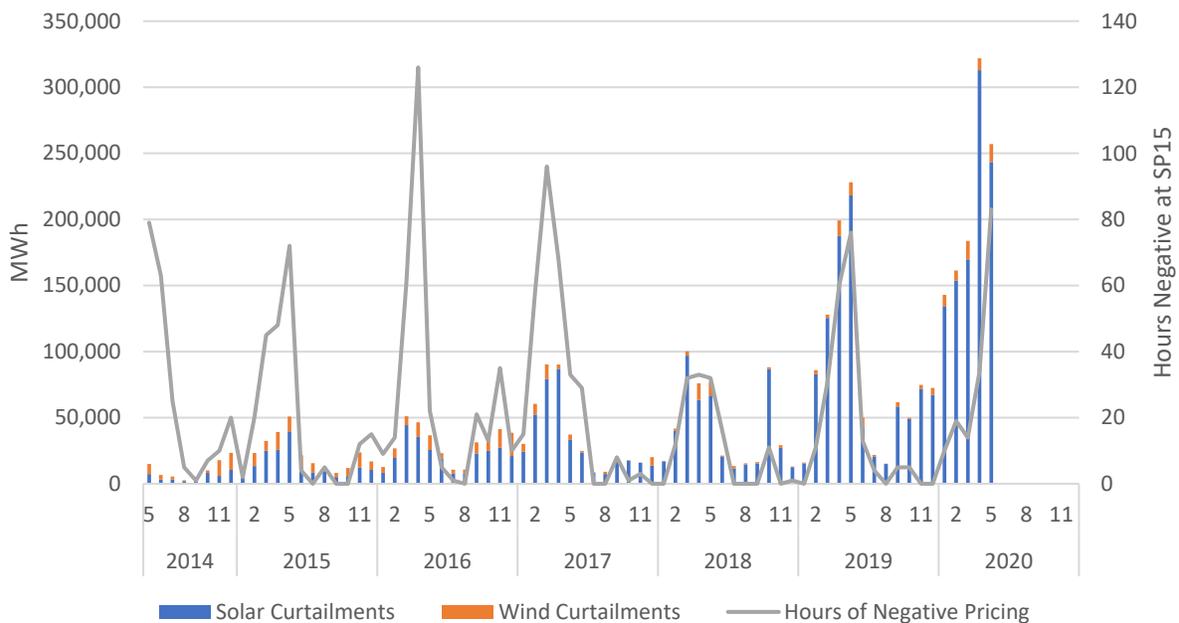
Curtailment

WCE considers the impact of curtailment and negative pricing on its planned individual portfolio and factors potential curtailment into its long-term planning. Due to the difficulty in accurately forecasting curtailment, WCE plans to actively review the historical data on curtailment and negative pricing for the regions where WCE is considering future

procurement for contracted or owned generating resources. As WCE evaluates new procurement, the potential amount of future curtailment is one factor that WCE will consider. Although WCE does not plan to develop an individualized forecast of future curtailment, WCE will factor potential curtailment into its risk assessment for procurement. In addition, WCE will take actions to limit the impacts of curtailment on its ratepayers as it procures. WCE plans to pursue contract terms that recognize and limit the potential financial impacts of negative pricing and give WCE greater flexibility to direct economic curtailment.

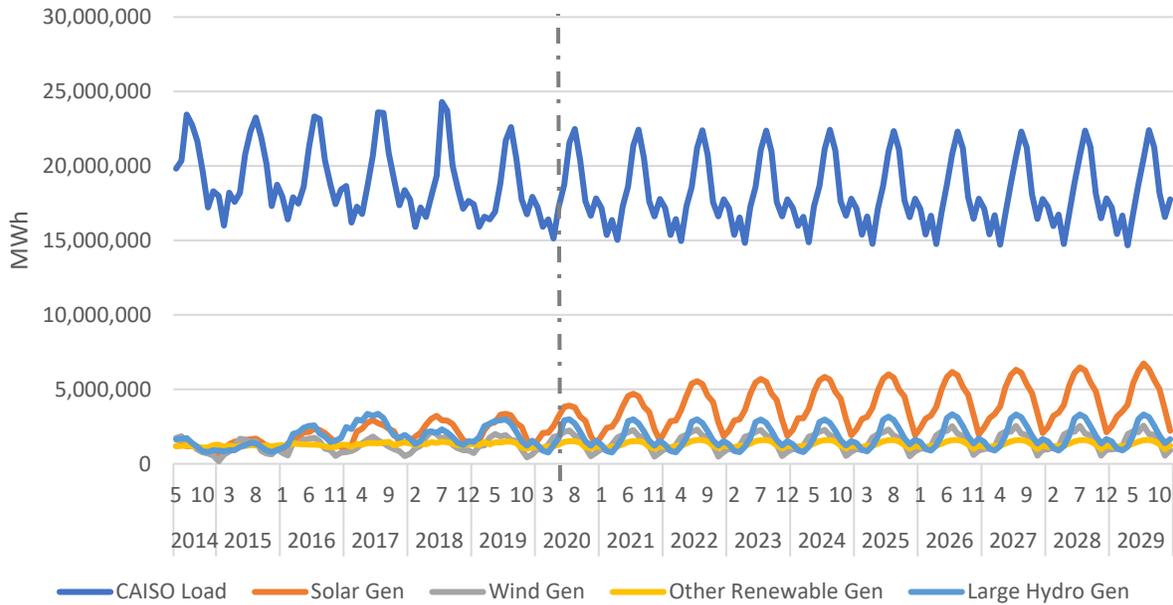
WCE performed a quantitative analysis on negative pricing over the next ten years. Figure II compares the number of hours of negative electric pricing for SP15 to the quantity of solar and wind curtailments. While curtailments have grown over time, the amount of negative pricing hours, while peaking in 2016, has remained relatively flat. There is, however, a relationship between the amount of renewable generation, curtailment and negative pricing. WCE has estimated the number of negative pricing hours through 2030 for the SP15 trading hub.

Figure 11. Renewable Curtailments and Negative SP15 Pricing



WCE developed a forecast of curtailment based on actual planned and under construction projects, which does not include projections or retirements. Forecasts by fuel type are shown below, where the dashed vertical line distinguishes actual values from forecasted. Large hydro production is assumed to be based on average water years and does not factor in potential resource retirements.

Figure 12. CAISO Load and Generation: Actual and Forecast



The annual estimate of negative pricing hours is shown below.

Table 13. Negative SP15 Pricing Hours, by year

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Hours Negative	223	317	311	137	205	160*									
Forecasted						290	335	400	409	419	442	479	491	504	520

*through May 31, 2020

Negative pricing hours pose some difficulty in estimating. It occurs relatively infrequently, making up on average just 2.7 percent of annual hourly prices. Although renewable generation weighted by CAISO load is a statistically significant predictor, there is considerable variation in renewable generation, the majority of which does not result in negative market pricing. Figures 11 and 12 illustrate that while renewable generation has grown, there has been a diminishing impact on negative pricing. The estimates in Table 12 assume the relationship over the past five years to hold into the future. It is likely that the market will adjust as storage is implemented, resulting in fewer hours with negative pricing. WCE continually monitors its loads and load forecasts as key variables such as weather and modified load shapes are observed.

m. COMMISSION DIRECTION OR ACTIONS

WCE is not seeking any specific CPUC direction at this time. WCE has completed the required data templates. Most of the entries are for generic resources and contracts, except for specific resources entered into at the time of Board Approval of this Plan. The data provided is consistent with the portfolio results described earlier.

n. DIABLO CANYON POWER PLANT REPLACEMENT

Diablo Canyon Power Plant (DCPP) is scheduled to retire in 2024 and 2025, which will remove over 2,000 MW of baseload power. Decision 19.04.040 allocated this lost capacity to currently serving LSEs. While WCE was not serving load at the time D.19.04.040 was issued, WCE recognizes that its load share of the RSP includes a share of Diablo Canyon through 2025.

By largely mirroring the resource selection and the pace of additions included in the RSP and 38 MMT system-wide scenarios in its own conforming portfolios, WCE is ensuring its contribution to replacing DCPP is embedded within its plans. Further, while the amount of baseload, GHG-free generation is not substituted MW for MW by replacement resources, the volume and mix of new resources selected in the RSP and 38-MMT system-wide scenario collectively fill the loss of energy and reliability caused by DCPP retirement due to Resolve's modeling constraints.

Because of its commitment to procuring clean resources and satisfying system reliability requirements, WCE can guarantee its replacement resources will not be GHG-emitting. And as demonstrated by the RSP and 38 MMT portfolio, DCPP replacement can be accomplished by a mix of wind, solar, DR and storage resources. WCE therefore plans to rely on the same set of resource types to substitute for DCPP. However, WCE recognizes that the production profiles of the new, GHG-free generating resources in its conforming portfolios do not match the baseload generation offered by DCPP and additional measures are needed to ensure replacement power does not result in an overall increase in GHG emissions.

To address this, WCE ensured that the qualifying capacity of new resources added in WCE's portfolios exceeded its load-share of DCPP's system RA value over the modeling horizon in both 46 MMT and 38 MMT portfolios. WCE demonstrated this by calculating the capacity contributions of incremental resources in its portfolios using the System Reliability Progress Tracking table in the Resource Data Template for its 46 MMT and 38 MMT portfolios (i.e. not included in Resolve's baseline). For the 38 MMT portfolio, in 2022, the NQC of WCE's incremental capacity is 74 MW which is greater than its load-share of DCPP's RA value (9 MW). By 2026, WCE's incremental capacity contributions remain in excess of its DCPP share by over 100 MW in the 46 MMT scenario and grows to over 110 MW in the 38 MMT scenario.

As further support, WCE compared the capacity contribution of its incremental resources to its implied load-share of the capacity contribution of the selected resources in the RSP and 38 MMT system-wide scenarios, using the NQC values in the Resource Data Template and again found its portfolios to far exceed its expected capacity contribution. Overall, because WCE's conforming portfolios demonstrate new capacity contributions by 2026 that exceed its load-share DCPP's RA value, WCE is ensuring it is prudently planning for DCPP retirement.

o. LESSONS LEARNED

Through this process WCE has identified the following lessons learned:

1. The RSP does a good job of analyzing resources from a state perspective; however, the RSP does not well-represent individual LSE resource choice.
2. Hedging strategies are an appropriate way for WCE to plan for hydropower variability.
3. In the recent decision granting Central Procurement Entity (CPE) authority to SCE, WCE is no longer required to plan for future RA needs, unless it elects to self-procure. As such, LSEs should not be required to enter future RA resources in the RDT.
4. The CSP tool is useful for analyzing WCE's share of the RSP.
5. The Commission's August release of FAQs in August was helpful in completing the RDT; however, the information was provided inside of 3 weeks prior to the filing deadline.

Glossary of Terms

Alternative Portfolio: LSEs are permitted to submit “Alternative Portfolios” developed from scenarios using different assumptions from those used in the Reference System Plan. Any deviations from the “Conforming Portfolio” must be explained and justified.

Approve (Plan): the CPUC’s obligation to approve an LSE’s integrated resource plan derives from Public Utilities Code Section 454.52(b)(2) and the procurement planning process described in Public Utilities Code Section 454.5, in addition to the CPUC obligation to ensure safe and reliable service at just and reasonable rates under Public Utilities Code Section 451.

Balancing Authority Area (CAISO): the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

Baseline Resources: Those resources assumed to be fixed as a capacity expansion model input, as opposed to Candidate resources, which are selected by the model and are incremental to the Baseline. Baseline resources are existing (already online) or owned or contracted to come online within the planning horizon. Existing resources with announced retirements are excluded from the Baseline for the applicable years. Being “contracted” refers to a resource holding signed contract/s with an LSE/s for much of its energy and capacity, as applicable, for a significant portion of its useful life. The contracts refer to those approved by the CPUC and/or the LSE’s governing board, as applicable. These criteria indicate the resource is relatively certain to come online. Baseline resources that are not online at the time of modeling may have a failure rate applied to their nameplate capacity to allow for the risk of them failing to come online.

Candidate resource: those resources, such as renewables, energy storage, natural gas generation, and demand response, available for selection in IRP capacity expansion modeling, incremental to the Baseline resources.

Capacity Expansion Model: a capacity expansion model is a computer model that simulates generation and transmission investment to meet forecast electric load over many years, usually with the objective of minimizing the total cost of owning and operating the electrical system. Capacity expansion models can also be configured to only allow solutions that meet specific requirements, such as providing a minimum amount of capacity to ensure the reliability of the system or maintaining greenhouse gas emissions below an established level.

Certify (a Community Choice Aggregator Plan): Public Utilities Code 454.52(b)(3) requires the CPUC to certify the integrated resource plans of CCAs. “Certify” requires a formal act of the Commission to determine that the CCA’s Plan complies with the requirements of the statute and the process established via Public Utilities Code 454.51(a). In addition, the Commission must review the CCA Plans to determine any potential impacts on public utility bundled customers under Public Utilities Code Sections 451 and 454, among others.

Clean System Power (CSP, formerly “Clean Net Short”) methodology: the methodology used to estimate GHG emissions associated with an LSE’s Portfolio based on how the LSE will expect to rely on system power on an hourly basis.

Community Choice Aggregator: a governmental entity formed by a city or county to procure electricity for its residents, businesses, and municipal facilities.

Conforming Portfolio: the LSE portfolio that conforms to IRP Planning Standards, the 2030 LSE-specific GHG Emissions Benchmark, use of the LSE's assigned load forecast, use of inputs and assumptions matching those used in developing the Reference System Portfolio, as well as other IRP requirements including the filing of a complete Narrative Template, a Resource Data Template and Clean System Power Calculator.

Effective Load Carrying Capacity: a percentage that expresses how well a resource is able to avoid loss-of-load events (considering availability and use limitations). The percentage is relative to a reference resource, for example a resource that is always available with no use limitations. It is calculated via probabilistic reliability modeling and yields a single percentage value for a given resource or grouping of resources.

Electric Service Provider: an entity that offers electric service to a retail or end-use customer, but which does not fall within the definition of an electrical corporation under Public Utilities Code Section 218.

Filing Entity: an entity required by statute to file an integrated resource plan with CPUC.

Future: a set of assumptions about future conditions, such as load or gas prices.

GHG Benchmark (or LSE-specific 2030 GHG Benchmark): the mass-based GHG emission planning targets calculated by staff for each LSE based on the methodology established by the California Air Resources Board and required for use in LSE Portfolio development in IRP.

GHG Planning Price: the systemwide marginal GHG abatement cost associated with achieving a specific electric sector 2030 GHG planning target.

Integrated Resources Planning Standards (Planning Standards): the set of CPUC IRP rules, guidelines, formulas and metrics that LSEs must include in their LSE Plans.

Integrated Resource Planning (IRP) process: integrated resource planning process; the repeating cycle through which integrated resource plans are prepared, submitted, and reviewed by the CPUC

Long term: more than 5 years unless otherwise specified.

Load Serving Entity: an electrical corporation, electric service provider, community choice aggregator, or electric cooperative.

Load Serving Entity (LSE) Plan: an LSE's integrated resource plan; the full set of documents and information submitted by an LSE to the CPUC as part of the IRP process.

Load Serving Entity (LSE) Portfolio: a set of supply- and/or demand-side resources with certain attributes that together serve the LSE's assigned load over the IRP planning horizon.

Loss of Load Expectation (LOLE): a metric that quantifies the expected frequency of loss-of-load events per year. Loss-of-load is any instance where available generating capacity is insufficient to serve electric demand. If one or more instances of loss-of-load occurring within

the same day regardless of duration are counted as one loss-of-load event, then the LOLE metric can be compared to a reference point such as the industry probabilistic reliability standard of “one expected day in 10 years,” i.e. an LOLE of 0.1.

Net Qualifying Capacity: *Qualifying Capacity reduced, as applicable, based on: (1) testing and verification; (2) application of performance criteria; and (3) deliverability restrictions. The Net Qualifying Capacity determination shall be made by the California ISO pursuant to the provisions of this California ISO Tariff and the applicable Business Practice Manual.*

Non-modeled costs: *embedded fixed costs in today’s energy system (e.g., existing distribution revenue requirement, existing transmission revenue requirement, and energy efficiency program cost).*

Nonstandard LSE Plan: *type of integrated resource plan that an LSE may be eligible to file if it serves load outside the CAISO balancing authority area.*

Optimization: *an exercise undertaken in the CPUC’s Integrated Resource Planning (IRP) process using a capacity expansion model to identify a least-cost portfolio of electricity resources for meeting specific policy constraints, such as GHG reduction or RPS targets, while maintaining reliability given a set of assumptions about the future. Optimization in IRP considers resources assumed to be online over the planning horizon (baseline resources), some of which the model may choose not to retain, and additional resources (candidate resources) that the model is able to select to meet future grid needs.*

Planned resource: *any resource included in an LSE portfolio, whether already online or not, that is yet to be procured. Relating this to capacity expansion modeling terms, planned resources can be baseline resources (needing contract renewal, or currently owned/contracted by another LSE), candidate resources, or possibly resources that were not considered by the modeling, e.g., due to the passage of time between the modeling taking place and LSEs developing their plans. Planned resources can be specific (e.g., with a CAISO ID) or generic, with only the type, size and some geographic information identified.*

Qualifying capacity: *the maximum amount of Resource Adequacy Benefits a generating facility could provide before an assessment of its net qualifying capacity.*

Preferred Conforming Portfolio: *the conforming portfolio preferred by an LSE as the most suitable to its own needs; submitted to CPUC for review as one element of the LSE’s overall IRP plan.*

Preferred System Plan: *The Commission’s integrated resource plan composed of both the aggregation of LSE portfolios (i.e., Preferred System Portfolio) and the set of actions necessary to implement that portfolio (i.e., Preferred System Action Plan).*

Preferred System Portfolio: *the combined portfolios of individual LSEs within the CAISO, aggregated, reviewed and possibly modified by Commission staff as a proposal to the Commission, and adopted by the Commission as most responsive to statutory requirements per Pub. Util. Code 454.51; part of the Preferred System Plan.*

Reference System Plan: *The Commission’s integrated resource plan that includes an optimal portfolio (Reference System Portfolio) of resources for serving load in the CAISO balancing*

authority area and meeting multiple state goals, including meeting GHG reduction and reliability targets at least cost.

Reference System Portfolio: *the multi-LSE portfolio identified by staff for Commission review and adopted/modified by the Commission as most responsive to statutory requirements per Pub. Util. Code 454.51; part of the Reference System Plan.*

Short term: *1 to 3 years (unless otherwise specified).*

Staff: *CPUC Energy Division staff (unless otherwise specified).*

Standard LSE Plan: *type of integrated resource plan that an LSE is required to file if it serves load within the CAISO balancing authority area (unless the LSE demonstrates exemption from the IRP process).*

Western Community Energy: *Western Community Energy is a CCA program consisting of 7 member cities.*

Western Riverside Council of Governments (WRCOG): *A Joint Powers Agreement representing member local governments that seek to provide cooperative planning, coordination, and technical assistance on issues of mutual concern that cross jurisdictional lines. WRCOG includes 18 cities, County of Riverside, 2 municipal water districts, Riverside County Superintendent of Schools, and Morongo Band of Mission Indians.*